

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re the Application of Koji HOTTA, et al.  
 Group Art Unit : (Unassigned)  
 Application No. : (Natl. Phase of PCT/JP2004/018432)  
 Examiner : (Unassigned)  
 Filed : (Herewith)  
 Docket No. : 12394/3  
 For : TRENCH GATE FIELD EFFECT DEVICES

**INFORMATION DISCLOSURE STATEMENT**

COMMISSIONER FOR PATENTS  
 Customer Service Window  
 Randolph Bldg.  
 401 Dulany Street  
 Alexandria, VA 22314

Sir:

Pursuant to 37 CFR § 1.56, the attention of the Patent and Trademark Office is hereby directed to the reference(s) listed on the attached PTO-1449. Unless otherwise indicated herein, one copy of each reference is attached. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the reference(s) be made of record therein and appear among the "References Cited" on any patent to issue therefrom. The filing of this Information Disclosure Statement and the enclosed PTO Form No. 1449, shall not be construed as an admission that the information cited is prior art, or is considered to be material to patentability as defined in 37 C.F.R. § 1.56(b). The paragraphs marked below are applicable. It is believed that no fees other than those indicated below are due, but authorization is hereby given to charge any additional fees due, or to credit any overpayment, to deposit account 11-0600.

☒ 1. This Information Disclosure Statement is being filed (a) within three months of the filing date of a national application other than a continued prosecution application under 37 C.F.R. §1.53(d), (b) within three months of the date of entry of the national stage as set forth in 37 C.F.R. § 1.491 in an international application, (c) before the mailing date of a first Office Action on the merits in the present application, OR (d) before the mailing of a first office action after filing of a request for continued examination. No certification or fee is required.

☐ 2. This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a final action, Notice of Allowance, or any action that otherwise closes prosecution.

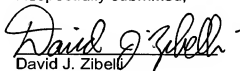
AP3 Rec'd PCT/PTO 05 JUN 2008

- ☐ a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).
- ☐ b. I hereby certify that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).
- ☐ c. Please debit Deposit Account No. 11-0600 in the amount of \$180.00 in payment of the fee under 37 CFR §1.17(p) to ensure consideration of the disclosed information. Two duplicate copies of this paper are attached. 37 CFR §1.97(c)(2).
- ☐ 3. This Information Disclosure Statement is being filed after the mailing date of a final action, Notice of Allowance or an action that otherwise closes prosecution, but before payment of the Issue Fee. Applicant(s) hereby request(s) that the Information Disclosure Statement be considered. Please debit Deposit Account No. 11-0600 in the amount of \$180.00 in payment of the petition fee under 37 CFR §1.17(p) to ensure consideration of the disclosed information. Two duplicate copies of this paper are attached.
- ☐ a. I hereby certify that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in any counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(1).
- ☐ b. I hereby certify that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 CFR §1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 CFR §1.97(e)(2).
- ☐ 4. Relevance of the non-English language reference(s) is discussed in the present specification.
- ☐ 5. The reference(s) was/were cited in a counterpart foreign application. An English language version of the foreign search report is attached for the Examiner's information.
- ☐ 6. A concise explanation of the relevance of certain non-English language reference(s) appears in the Appendix attached hereto.
- ☐ 7. The Examiner's attention is directed to co-pending U.S. Patent Application No. \_\_\_\_\_, filed, which is directed to related technical subject matter. The identification of this U.S. Patent Application is not to be construed as a waiver of secrecy as to that application now or upon issuance of the present

application as a patent. The Examiner is respectfully requested to consider the cited application and the art cited therein during examination of the present application.

- ☐ 8. This application is one of a series of related applications, identified in the attached Appendix, which are directed to related technical subject matter. The identification of those U.S. Patent Applications is not to be construed as a waiver of secrecy as to those applications now or upon issuance of the present application as a patent. The Examiner is respectfully requested to consider the cited applications and the art cited therein during the examination.
- ☐ 9. The reference(s) was/were cited by or submitted to the Office in parent application No. \_\_\_\_\_, filed \_\_\_\_\_, which is relied upon for an earlier filing date under 35 U.S.C. §120. Thus, copies of these references are not attached. 37 CFR §1.98(d).
- ☒ 10. English-language Abstracts of the non-English language references are attached thereto.
- ☒ 11. Copies of U.S. references are not required.
- ☒ 12. Other: Six of the references were cited in the International Search Report, a copy of which is enclosed, as well as the Written Opinion and the IPRP.

Respectfully submitted,

  
David J. Zibell  
(Reg. No. 36,394)

Date: 05 June 2006

KENYON & KENYON LLP  
1500 K Street, N.W.  
Washington, D.C. 20005

Telephone: (202) 220-4200  
Facsimile: (202) 220-4201

Substitute for form 1449A/PTO

# **INFORMATION DISCLOSURE STATEMENT BY APPLICANT**

(Use as many sheets as necessary)

Sheet 1 of 2

## **Complete if Known**

Application Number	(Natl. phase of PCT/JP04/018432)
Filing Date	(Herewith)
First Named Inventor	Koji HOTTA
Art Unit	(Unassigned)
Examiner Name	(Unassigned)
Attorney Docket Number	12394/3

## **U.S. PATENT DOCUMENTS**

Examiner Initials *	Cite No. 1	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number - Kind Code <sup>2</sup> (if known)			
	1	US-5,751,024	03/12/98	TAKAHASHI	= JP 07-054564
	2	US-6,001,678	12/14/99	TAKAHASHI	= JP 07-054564
	3	US-6,040,599	03/21/00	TAKAHASHI	= JP 08-054656
	4	US-6,221,721	04/24/01	TAKAHASHI	= JP 08-054656
	5	US-6,766,168	07/27/04	TAKAHASHI	= JP 07-054564
	6	US-6,518,629	02/11/03	KUSHIDA et al.	= JP 11-167880
	7	US-2002/017996 A1	12/05/02	PFIRSCH	
	8	US-5,463,241	10/31/95	KUBO	
	9	US-6,518,629 B1	02/11/03	KUSHIDA et al.	
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## **FOREIGN PATENT DOCUMENTS**

Examiner Initials *	Cite No. 1	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Country Code <sup>4</sup> - Number <sup>4</sup> - Kind Code <sup>5</sup> (if known)				
	1	JP 10-270693 A	10/09/98	TOYOTA CENTRAL RES & DEV LAB INC		Abs.
	2	JP 10-294461 A	11/04/98	TOYOTA CENTRAL RES & DEV LAB INC		Abs.
	3	JP 08-316479 A	11/29/96	MITSUBISHI ELECTRIC CORP.		Abs.

Examiner Signature /Benjamin Sandvik/ (06/29/2009)

Date Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on this document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(use as many sheets as necessary)

Sheet	2	of	2
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*Complete if Known*

Application Number	(Natl. Phase of PCT/JP04/018432)
Filing Date	(Herewith)
First Named Inventor	Koji HOTTA
Group Art Unit	(Unassigned)
Examiner Name	(Unassigned)
Attorney Docket Number	12394/3

## OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	1	M. Mori, et al.: <i>A Novel High-Conductivity IGBT (HiGT) with a Short Circuit Capability</i> , PROCEEDINGS OF 1998 INTERNATIONAL SYMPOSIUM ON POWER SEMICONDUCTOR DEVICES & ICs, Kyoto, Japan, p 429-432	
	2	Hideki Nakamura, et al.: <i>Wide cell pitch 1200V NPT CSTBTs with short circuit ruggedness</i> , PROCEEDINGS OF 2001 INTERNATIONAL SYMPOSIUM ON POWER SEMICONDUCTOR DEVICES & ICs, Osaka, Japan, pp. 299-302	
Examiner Signature	/Benjamin Sandvik/ (06/29/2009)		Date Considered

\*EXAMINER. Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.<sup>1</sup> Unique citation designation number.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /B.S./